

WHAT IS CLAIMED IS:

1. An exhaust gas purifying catalyst comprising:
a monolithic substrate;
a first catalytic layer formed on said monolithic substrate,
5 said first catalytic layer containing at least one noble metal
selected from the group consisting of rhodium, platinum and
palladium, compound of at least one metal selected from the group
consisting of alkali metal, alkaline earth metal and rare earth
metal, and alumina; and
10 a second catalytic layer formed on said first catalytic layer
and containing rhodium, at least one noble metal selected from the
group consisting platinum and palladium, compound of at least
one metal selected from the group consisting of alkali metal,
alkaline earth metal and rare earth metal, and alumina, a content
15 of the compound of the at least one metal in said second catalytic
layer being larger than that in said first catalytic layer.
2. An exhaust gas purifying catalyst as claimed in Claim 1,
wherein a ratio between the content of the compound in said
20 second catalytic layer and the content of the compound in said first
catalytic layer is higher than 1 : 1 and not higher than 3 : 1.
3. An exhaust gas purifying catalyst as claimed in Claim 1,
wherein a content of alumina in each of said first and second
25 catalytic layers is not less than 100 g per one liter of said
monolithic substrate.
4. An exhaust gas purifying catalyst as claimed in Claim 1,
where a content of the at least one noble metal in said first and
30 second catalytic layers is within a range of from 1.5 to 3.0 g per one
liter of said monolithic substrate.
5. An exhaust gas purifying catalyst as claimed in Claim 1,

0066579-110601

wherein said the content of the compound in said first and second catalytic layers is within a range of from 1 to 50 g per one liter of the monolithic substrate, the content being calculated as oxide.

5 6. An exhaust gas purifying catalyst as claimed in Claim 1, wherein each of said first and second catalytic layers contains compound of at least two metals selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal.

10 7. An exhaust gas purifying catalyst as claimed in Claim 6, wherein the two metals are barium and magnesium.

8. An exhaust gas purifying catalyst comprising:
a monolithic substrate;

15 a catalytic layer coated on said monolithic substrate, said catalytic layer containing at least one noble metal selected from the group consisting of platinum, palladium and rhodium, compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal, and
20 alumina, said catalytic layer having a surface section including a surface of said catalytic layer, and an inner section located inside relative to the surface section,

wherein a difference in concentration of said compound between the surface section and the inner section of said catalytic
25 layer is within a range of $\pm 10\%$.

9. A method of producing an exhaust gas purifying catalyst including a monolithic substrate; a first catalytic layer formed on said monolithic substrate, said first catalytic layer containing at
30 least one noble metal selected from the group consisting of rhodium, platinum and palladium, compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal, and alumina; and a second catalytic

10085733-110601

layer formed on said first catalytic layer and containing rhodium, at least one noble metal selected from the group consisting of platinum and palladium, compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal, and alumina, a content of the compound of at least one metal in said second catalytic layer being larger than that in said first catalytic layer,

said method comprising:

preparing first powder by causing the at least one noble metal selected from the group consisting of rhodium, platinum and palladium to be carried on alumina;

preparing a first aqueous solution of the compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal;

forming a first mixture of the first powder and the first aqueous solution;

grinding the first mixture to form a first slurry;

coating the first slurry on the monolithic substrate to form the first catalytic layer;

preparing second powder by causing rhodium to be carried on alumina;

preparing third powder by causing at least one noble metal selected from the group consisting of platinum and palladium;

preparing a second aqueous solution of the compound of at least metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal;

forming a second mixture of the second powder, the third powder and the second aqueous solution;

grinding the second mixture to form a second slurry; and

coating the second slurry on the first catalytic layer formed on the monolithic substrate to form the second catalytic layer.

10. A method as claimed in Claim 9, wherein powder materials

of each of the first and second slurries have a median particle diameter of not larger than 4 μm .

11. A method of producing an exhaust gas purifying catalyst including a monolithic substrate; a catalytic layer coated on said monolithic substrate, said catalytic layer containing at least one noble metal selected from the group consisting of platinum, palladium and rhodium, compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal, and alumina, said catalytic layer having a surface section including a surface of said catalytic layer, and an inner section located inside relative to the surface section, wherein a difference in concentration of said compound between the surface section and the inner section of said catalytic layer is within a range of $\pm 10\%$,
- the method comprising:
- preparing powder by causing the at least one noble metal selected from the group consisting of rhodium, platinum and palladium to be carried on alumina;
- preparing an aqueous solution of the compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal;
- forming a mixture of the powder and the aqueous solution;
- grinding the mixture to form a slurry; and
- coating the slurry on the monolithic substrate to form the first catalytic layer.